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Model 218 Temperature Monitor

Product Overview	Tech Specs	Ordering Information	Downloads
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Input Specifications

	Sensor Temperature Coefficient	Input Range	Excitation Current	Display Resolution	Measurement Resolution	Electronic Accuracy
Diode	negative	0 V to 2.5 V	10 μ A \pm 0.05% ⁹	100 μ V	20 μ V	\pm 160 μ V \pm 0.01% of rdg
	negative	0 V to 7.5 V	10 μ A \pm 0.01% ⁹	100 μ V	20 μ V	\pm 160 μ V \pm 0.02% of rdg
PTC RTD	positive	0 W to 250 W	1 mA \pm 0.3% ¹⁰	10 mW	2 mW	\pm 0.004 W \pm 0.02% of rdg
	positive	0 W to 500 W	1 mA \pm 0.3% ¹⁰	10 mW	2 mW	\pm 0.004 W \pm 0.02% of rdg
	positive	0 W to 5000 W	1 mA \pm 0.3% ¹⁰	100 mW	20 mW	\pm 0.06 W \pm 0.04% of rdg
NTC RTD	negative	0 W to 7500 W	10 μ A \pm 0.01% ⁹	100 mW	50 mW	\pm 0.1 W \pm 0.04% of rdg

⁹ Current source error has negligible effect on measurement accuracy

¹⁰ Current source error is removed during calibration

Thermometry

Number of inputs	8
Input configuration	Inputs separated into two groups of four (each group must be the same sensor type) – inputs can be configured from the front panel to accept any of the supported input types
Input accuracy	Sensor dependent – refer to Input Specifications table
Measurement resolution	Sensor dependent – refer to Input Specifications table
Maximum update rate	16 reading per s total
User curves	Room for 8 (1 per unit) 200-point CalCurves™ or user curves
SoftCal™	Improves accuracy of DT-470 diode to \pm 0.25 K from 30 K to 375 K; improves accuracy of platinum RTDs to \pm 0.25 K from 70 K to 325; stored as user curves
Math	Maximum, minimum, and linear equation (Mx + B) or M(x + B)
Filter	Averages 2 to 64 input readings

Interface

IEEE-488.2 interface (218S)

Features	SH1, AH1, T5, L4, SR1, RL1, PP0, DC1, DT0, C0, E1
Reading rate	To 16 readings per s
Software support	LABVIEW™ driver

Serial interface

Electrical format	RS-232C
Max baud rate	9600 baud
Connector	9-pin D-sub
Reading rate	To 16 readings per s (at 9600 baud)
Printer capability	Support for serial printer through serial interface port used with data log parameters

Alarms

Number	16: high and low for each input
Data source	Temperature, sensor units, and linear equation
Settings	Source, high setpoint, low setpoint, deadband, latching or non-latching, and audible on/off
Actuators	Display annunciator, beeper, and relays (218S)

Relays (218S)

Number	8
Contacts	Normally open (NO), normally closed (NC), and common (C)
Contact rating	30 VDC at 5 A
Operation	Each input may be configured to activate any or all of the eight relays – relays may be activated on high, low, or both alarms for any input, or manually
Connector	Detachable terminal block

Analog voltage output (218S)

Number	2
Scale	User Selected
Update rate	To 16 readings per s
Data source	Temperature, sensor units, and linear equation
Range	\pm 10 V
Resolution	1.25 mV
Accuracy	\pm 2.5 mV
Min load resistance	1 kW (short-circuit protected)

Data logging

Channels	1 to 8
Operation	Data log records can be stored in memory or sent to the printer; stored data may be displayed, printed, or retrieved by computer interface

Sensor Input Configuration

	Diode/RTD
Measurement type	4-lead differential
Excitation	8 constant current sources
Supported sensors	Diodes: Silicon, GaAlAs RTDs: 100 W Platinum, 1000 W Platinum, Germanium, Carbon-Glass, Cernox™, and Rox™
Standard curves	DT-470, DT-500D, DT-670, CTI-C, PT-100, and PT-1000
Input connector	25-pin D-sub

Front Panel

Display	4 line by 20 character backlit LCD display
Number of reading displays	1 to 8
Display units	K, °C, V, and W
Reading source	Temperature, sensor units, max, min, and linear equation
Display update rate	All displayed inputs twice in 1 s
Temp display resolution	0.001° from 0° to 99.999°, 0.01° from 100° to 999.99°, 0.1° above 1000°
Sensor units display resolution	Sensor dependent to 5 digits
Display annunciators	Remote operation, alarm, data logging, max, min, and linear

Keypad Membrane keypad, 20-key, numeric and specific functions

Front panel features Front panel curve entry and keypad lock-out

Data memory Maximum of 1500 single reading records, non-volatile

General

Ambient temperature 15 °C to 35 °C at rated accuracy, 10 °C to 40 °C at reduced accuracy

Power requirement 100, 120, 220, 240 VAC, (+6%, -10%), 50 or 60 Hz, 18 VA

Size 216 mm W × 89 mm H × 318 mm D (8.5 in × 3.5 in × 12.5 in), half rack

Weight 3 kg (6.6 lb)

Approval CE mark

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Cryogenic Temperature Sensors

Measure temperatures from <20 mK to over 1,500 K. A wide selection of diodes, RTDs, thermocouples, and mounting packages are available. [Click here for more information on cryogenic temperature sensors.](#)



Cryogenic Accessories

Cryogenic and temperature measurement accessories include cable, wire, solder, heaters, insulating and conductive materials, and more. [Click here for more information on cryogenic accessories.](#)

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